WHAT IS CLAIMED:

1. An isolated DNA molecule from a *Thermotoga* species encoding a delta prime subunit of a DNA polymerase III-type enzyme, the isolated DNA molecule either:

(i) comprising a nucleotide sequence of SEQ ID NO: 147;

(ii) encoding an amino acid sequence of SEQ ID NO: 148; or

(iii) hybridizing to the complement of SEQ ID NO: 147 under hybridization conditions comprising at most about 0.9M sodium citrate buffer at a temperature of at least about 37°C.

2. The isolated DNA molecule according to claim 1, wherein the *Thermotoga* species is *Thermotoga maritima.*

3. The isolated DNA molecule according to claim 1, wherein the DNA molecule encodes an amino acid sequence of SEQ ID NO: 148.

4. The isolated DNA molecule according to claim 1, wherein the DNA molecule comprises a nucleotide sequence of SEQ ID NO: 147.

5. The isolated DNA molecule according to claim 1, wherein the DNA molecule hybridizes to the complement of SEQ ID NO: 147 under hybridization conditions comprising at most about 0.9M sodium citrate buffer at a temperature of at least about 37°C.

6. An expression system comprising an expression vector into which is inserted a heterologous DNA molecule according to claim 1.

7. A host cell comprising a heterologous DNA molecule according to claim 1.

8. A method of producing a recombinant thermostable delta prime subunit of a DNA polymerase III-type enzyme from a *Thermotoga* species, said method comprising:

transforming a host cell with the heterologous DNA molecule according to claim 1 under conditions suitable for expression of the delta prime subunit, and

isolating the delta prime subunit.

9. An isolated DNA molecule from *Thermotoga maritima* encoding a delta prime subunit of a DNA polymerase III enzyme, wherein the delta prime subunit is capable of forming a portion of a clamp loader that can cooperate with a DNA polymerase to form a DNA polymerase III-like particle.